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Marja Riihelä
Risto Sullström
Matti Tuomala

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Marja Riihelä
Government Institute for Economic Research

Risto Sullström
Government Institute for Economic Research

Matti Tuomala
University of Tampere

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ON ECONOMIC POVERTY IN FINLAND IN THE 1990s

Abstract

We have examined recent trends in the poverty in Finland using two data sources, the Household Budget Survey (HBS) and the Income Distribution statistics (IDS). We have drawn on the recent literature on poverty analysis to analyse a range of poverty measures. Scalar measures were complemented by an investigation of stochastic dominance in the analysis of poverty. As regards trends in poverty over time, the long-run perspective available from the HBS indicates that from the early 1970s to the beginning of 1990s, the relative poverty rate has declined. The latter part of the 1990s was clearly different. We find that poverty rose and became more severe over the period 1995-1999 for a very broad class of poverty measures and a wide range of poverty lines. Whilst the total numbers in poverty during the 1990s on these various definitions have risen markedly, the composition of the poor has also changed significantly. There is little doubt that unemployed households are the most vulnerable group of the population.

Key words: poverty, poverty measures, ordinal poverty comparisons

Marja Riihelä
Government Institute for Economic Research
Hämeentie 3, POB 269, FIN-00531 Helsinki
marja.riihela@vatt.fi

Risto Sullström
Government Institute for Economic Research
Hämeentie 3, POB 269, FIN-00531 Helsinki
risto.sullstrom@vatt.fi

Matti Tuomala
Department of Economics
FIN-33014 University of Tampere, Tampere
ktmatuo@uta.fi

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1 Introduction

Given the results of Riihelä et al. (2001) – particularly the absolute fall in mean real disposable incomes for the unemployed households during the 1990's – it is not surprising that poverty as a whole increased over the 1990's in Finland. The present paper explores poverty trends in greater detail. In order to quantify the extent of poverty during the 1990's in Finland we have to choose the yardstick by which poverty should be measured? Is it about incomes or expenditures? In this paper we use these both yardsticks. Second, having determined the yardstick, we have to decide at what point on the income or expenditure scale is the poverty line to be set. Should it be incomes or expenditures below some fraction of the national average? Or should it be incomes or expenditures close to minimum social security levels?[1]

As one could expect, there is no single answer to the question of how many people in Finland are poor. In this paper we provide a range of estimates that vary according to the poverty line and method of measuring living standard that are used. We report results from two main sources, the Household Budget Survey (HBS) and the Income Distribution Statistics (IDS) published by the Statistics Finland. The paper presents information on changes in the extent and composition of poverty, according to three aggregation procedures-one for each of the poverty measures computed: the head count ratio (H), the normalized poverty gap (HI) and the Foster-Greer-Thorbecke (FGT) measure with the poverty aversion parameter set to 2. In addition, scalar measures were complemented by an investigation of stochastic dominance in the analysis of poverty. Finally we utilize the decomposable property of FGT-measure.

[1]Given the multidimensionality of the standard of living one can argue a great deal at the theoretical level about the various methods of deriving a poverty line, and such debate is important. In practice, however, it is data availability, which almost always dictates the method chosen. We have typically to work with a given household income and expenditure survey.

2 Measuring poverty

There are two fundamental questions when measuring poverty. First we have to decide how an individual's standard of living should be quantified, and relatedly, how the poverty line is to be determined. The second question is how the degree of poverty relative to a particular poverty line is measured and how this is aggregated across those who are deemed to be poor. An important difference between the literature for developing and developed countries is that absolute considerations have dominated the former, while relative poverty has been more important in the latter. Some researchers, for example, Townsend (1985), commenting on Sen (1983), has taken the view that poverty is entirely relative.

A widely used method of defining poverty in developed countries is to relate incomes or expenditures to some proportion of prevailing national average. National average can be defined as median or mean, the proportion used can vary, say from 40 to 60 per cent, but the general principle is that poverty is to be defined wholly by distance from national average income or expenditure. Statistics of this kind are now widely used in comparative studies in the EU context (see e.g. Danziger-Jäntti, 2000).

There is now a large literature on poverty measures. For useful surveys see e.g. Foster (1984), Atkinson (1987), Ravallion (1994) and Zheng (1999). Here we shall focus on a few representative measures and those we use in our empirical analysis. In the discrete case, let there be N income receiving units and let the income unit i be denoted by y_i. The incomes and expenditures are arranged in ascending order and poverty line is z. More formally $y_1 \leq y_2 \leq \ldots \leq y_n < z \leq y_{n+1} \leq \ldots \leq y_N$ where there are n units below the poverty line. In the continuous case, let the density and cumulative density of y be given respectively by $f(y)$ and $F(y)$; and let y lie between y_{min} and y_{max}.

The most commonly used measure of poverty is the so-called head count ratio, the fraction of income-receiving units which are below the poverty line. Denoting this by H, it follows that in the discrete case and continuous case, respectively,

$$H = n/N, \; H = F(z). \tag{1}$$

For example, if 10 per cent of the population are deemed to be poor, then $H = 0.10$. While identifying the number of the poor, it ignores how poor the poor are, and therefore has the absurd property that it remains unchanged when a previously poor unit becomes even poorer. For example, if we take one Euro from the poorest unit and give it to the richest unit, the head count ratio would remain unchanged. This is one reason why the head count measure used as a measure of poverty has been under severe attack (see e.g. Sen 1976, 1979, and Watts, 1968). For certain sorts of poverty comparisons, such as assessing overall progress in reducing poverty, head count ratio may be quite satisfactory. Atkinson (1987, 1998) was among the few scholars who saw that the attack on the head count is not fully justified. He argued that 'minimum income may be seen as a basic right, in which case the head count may be quite acceptable as a measure of the number deprived of that right'.

One index which overcomes drawbacks of the head count measure is the income gap ratio, defined as

$$P_1 = \frac{1}{N}\sum_{i=1}^{n}(1 - y_i/z) \tag{2}$$

This reflects the average distances of the poor below the poverty line and therefore it gives a better idea of the depth of poverty. (2) can also be written $P_1 = HI$, where $I = 1 - m^z/z$, where m^z denotes the mean income or consumption of the poor. This gives the average of the poverty gaps $(z - y_i)$ as a fraction of the poverty line. To take account of the numbers of the poor in the sense that if the poor units were exactly duplication, I would remain unchanged, it is suggested that the product of HI would be more satisfactory. Thus HI is sensitive to both the numbers of the poor and to how poor they are. HI has an interesting interpretation, which makes it very attractive in policy applications. Namely HI measures the actual amount of income necessary to bring every household below the poverty line up to the poverty line. The drawback of the HI measure is that it is insensitive to redistribution of income within the poor household. If one Euro of income was taken from the poorest unit and given to a unit which is richer but still well below the poverty line the HI measure would remain unchanged. Sen (1976) has proposed a better measure of the severity of poverty, given by

$$S = H\left[I + (1 - I)G_p\right] \tag{3}$$

Where G_p is the Gini coefficient of poor income units. If there is no inequality

amongst the poor then $S = HI$. The S-measure in turn is not additive. In other words S is not equal to the population weighted sum of poverty levels in the various sub-groups of society. A measure of the severity of poverty which is decomposable is the Foster, Greer and Thorbecke (1984) (hereafter FGT). The FGT class of measure can be written as

$$P_a = \frac{1}{n}\sum_{i=1}^{n}[(z - y_i)/z]^a \tag{4}$$

The parameter $a \geq 0$ measures how sensitive the index is to transfers between the poor units. For $a > 1$, transfer from low to high incomes will increase poverty. When $a = 2$, this measure can be expressed as

$$P_a = H\,[I^2 + (1 - I)^2 C_p^2] \tag{5}$$

Where C_p is the coefficient of variation among the poor. This class of measure has proven very useful for policy analyses. It already contains indices (H) and (HI) as special cases

$$P(a = 0) = P_0 = H \tag{6}$$

$$P(a = 1) = P_1 = HI. \tag{7}$$

It is clearly the decomposability of P_a which has lead to its widespread application in practice.[2] Divide the population into m subgroups, mutually exclusive and exhaustive, with group j having a fraction x_j of the population; $\sum_{j=1}^{m} x_j = 1$. Denote the poverty index in subgroup j by $P_{j,a}$. Then

$$P_a = \sum_{j=1}^{m} x_j P_{j,a}. \tag{8}$$

Thus, overall poverty can be written as a weighted sum of subgroup poverty indices.

Although major advances have been made in the search for better cardinal measures of poverty, there is still widespread concern over arbitrariness in the choice of the poverty measure and the poverty line. Fortunately, for many applications, all that we need is the ordinal ranking of distribution. As Sen (1979) noted that "one may be forced to use more than one criterion because of non-uniformity of accepted standard and look at the partial ordering generated by the criteria taken

[2]E.g. in analysing the targeting of poverty alleviation programs see Kanbur (1987), Besley and Kanbur (1988) and Kanbur, Keen and Tuomala (1994).

together" (p. 280). An important strand of research in poverty analysis (Atkinson, 1987; Foster-Shorrocks, 1988) drawing on and developing results from the theory of stochastic dominance has shown when one can make reasonable ordinal poverty comparisons.

If ordinal comparisons suffice, we need not confine ourselves to a particular poverty line and poverty measure. If the class of poverty measures satisfies certain conditions, we can apply the first-order dominance test. Then it can be shown that poverty will unambiguously increase (decrease) between two dates, say 1990 and 1998 in Finland, if the cumulative distribution for the latter date lies nowhere below (above) that for the former date, up to z_{max}. Comparing distributions of 1990 and 1998, denoted by F(1990,z) and F(1998,z), if F(1998,z) is everywhere above F(1990,z) up to z_{max}, then the head count index must also be higher for 1998, no matter what the poverty line. When the first-order dominance is inconclusive, we can restrict the range of admissible poverty measures (excluding H) then we can use a second order dominance condition. In other words we restrict attention to measures which reflect the depth of poverty such as HI and P_2. When a second-order dominance, in turn, is inconclusive we can exclude H and HI and restrict our attention on distribution-sensitive measures such as P_2, then a third order dominance condition can be tested.

3 The data and results

We use the income distribution statistics (IDS) and the Household budget survey (HBS)[3] published by the Statistics Finland. The IDS is a sample survey of around 9000-11000 households drawn from the private households in Finland. The IDS contains information on incomes, taxes and benefits together with various socio-economic characteristics of the Finnish households. Most of the information contained in the IDS has been collected from various administrative registers. Auxiliary information is collected through interviews. Indirect taxes, such as VAT and specific commodity taxes and the provision of public services are not included on our data.

[3]See Suoniemi and Sullström (1995) and Ahlqvist and Pajunen (2000) for a detailed exposition of this data set.

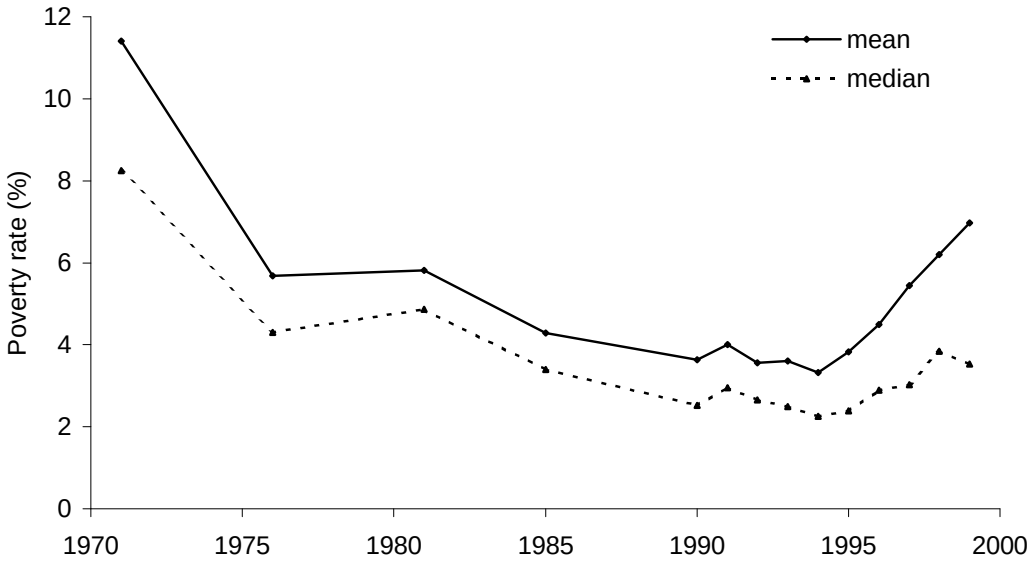


Figure 1: Numbers and percentage of the population below 50 per cent of mean and median disposable income, 1971-1999

This may have important consequences, because indirect taxes and public services tend to be regressive (see for example Riihelä-Sullström, 2001). All types of income and consumption used in this study are calculated on annual basis.

Households also differ in size and composition, and so a simple comparison of aggregate household consumption could be quite misleading about the well-being of individual members of a given household. The OECD equivalence scale is used in order to make households with different size and composition comparable. The OECD scale is calculated as follows. The first adult in each household has a weight of 1 and each additional adult a weight of 0.7. Each child under 18 years old gets a weight of 0.5. We also make comparisons with the so called modified OECD-scale, shortly MOECD. In this scale the first adult in each household has a weight of 1 and each additional adult a weight of 0.5. For the children, aged 0-13, the weight is 0.3. Members aged over 13 are adults. The new EU standard for the poverty line is determined by 60 per cents of median income (see Atkinson 2000).

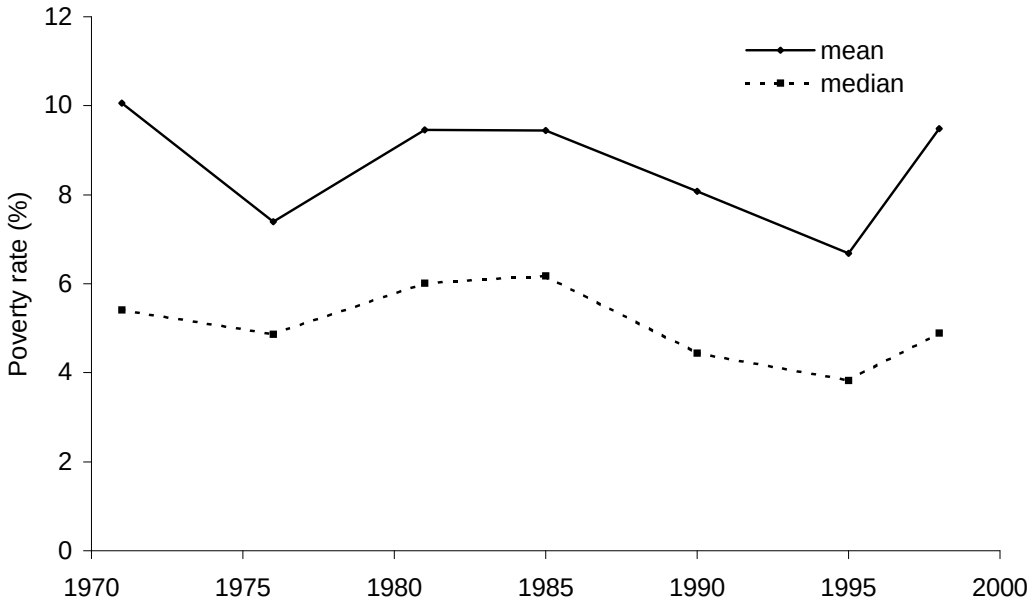


Figure 2: Numbers and percentage of the population below 50 per cent of mean and median consumption, 1971-1999

Figure 1 shows the trends in the relative poverty (defined in terms of having low income relative to a contemporaneous standard of living) between 1970 and 1999 when a poverty line is set equal to 50 per cent of median and mean income of the year concerned. The figure reveals that relative poverty declined until the mid 1990s. It rose, thereafter, sharply during the latter part of the 1990s. The relative income poverty rate[4], a poverty line set at 50 per cent of median (mean) income, was in 1971 8.3 per cent (11.4), in 1993 2.5 per cent (3.6) and in 1999 3.6 per cent (7.0) (see Table A1 in Appendix). Figure 1 also reveals that the relative poverty measured as a fraction of mean is always greater than that of measured as a fraction of median. The growing gap between mean and median based measures is consistent with the findings of the increase in income inequality during that period (see Riihelä et al., 2001).

Figure 2 in turn shows the trends in the relative poverty when based on consump-

[4]Numbers of the population below 50 per cent of median (mean) income are in 1971 369000 (511000), in 1993 125000 (181000) and in 1999 180000 (355000).

tion expenditure. We can see that in this case relative poverty declined from year 1985 to the mid 1990s. However, the trends of income and consumption poverty are in the direction with the same tendency in the late of 1990s. The relative consumption expenditure poverty rate[5], a poverty line set at 50 per cent of median (mean), was in 1971 5.4 per cent (10.1), in 1990 4.4 per cent (8.1), in 1994-1996 3.8 per cent (6.7) and in 1998 4.9 per cent (9.5).

What is striking about Figure 3 is that whether the poverty line is set at 40, 50 or 60 per cent of national average income, the numbers below the line have risen dramatically since the beginning of the 1990s. Using the 50 per cent threshold, the proportions have risen from 3.7 per cent to 7.0 per cent of the population. These charts do, however, demonstrate that the choice of poverty line can still have important implications to the precise description of trends as well as levels (see Figure A1 in Appendix).The change in equivalence scales affects not only the level of poverty, but also the composition of poverty. The level-effect of adopting the modified OECD scale (MOECD) is shown in Figure 4. (see also Tables A1 and A2).

One problem with the poverty measure based on a proportion of the mean is that the mean may be skewed upwards by some very high incomes at the very top of the distribution. This may be a reason why the poverty measures based on a proportion of the mean deviates from those based on the proportion of the median income during the latter part of the 1990s. It is also reasonable to argue that what is happening at the top of distribution should not affect the measurement of poverty. A poverty measure less sensitive to such effects is one based on a proportion of the median, the point in the middle of the distribution.

Table 1 (see also Tables A1 and A2) gives our estimates of income poverty in Finland for various poverty measures and for different poverty lines (40, 50 and 60 per cent of median income). All three measures and three poverty lines indicate a significant increase in income poverty between 1990 and 1998. We find that the head count index of poverty (H) increased from 2.5 per cent to 3.9 per cent by 1998 poverty line being 50 per cent of median and from 6.7 to 8.9 per cent poverty

[5]Numbers of the population below 50 per cent of median (mean) consumption expenditure are in 1971 24200 (450000), in 1990 220000 (399000), in 1994-1996 193000 (337000) and in 1998 248000 (482000).

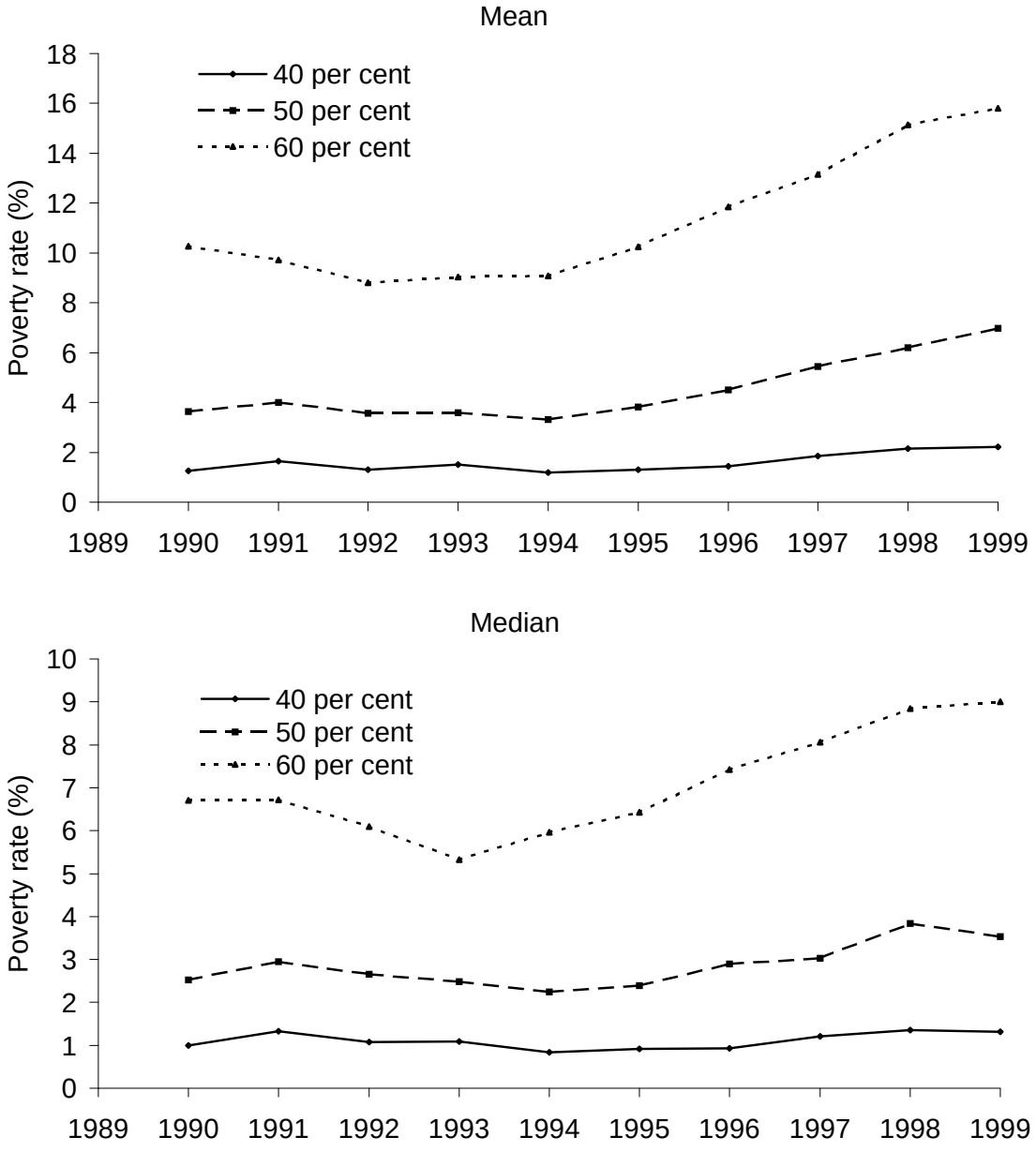


Figure 3: Percentage of the population below 40, 50 and 60 per cent of mean and median disposable income 1990-1999

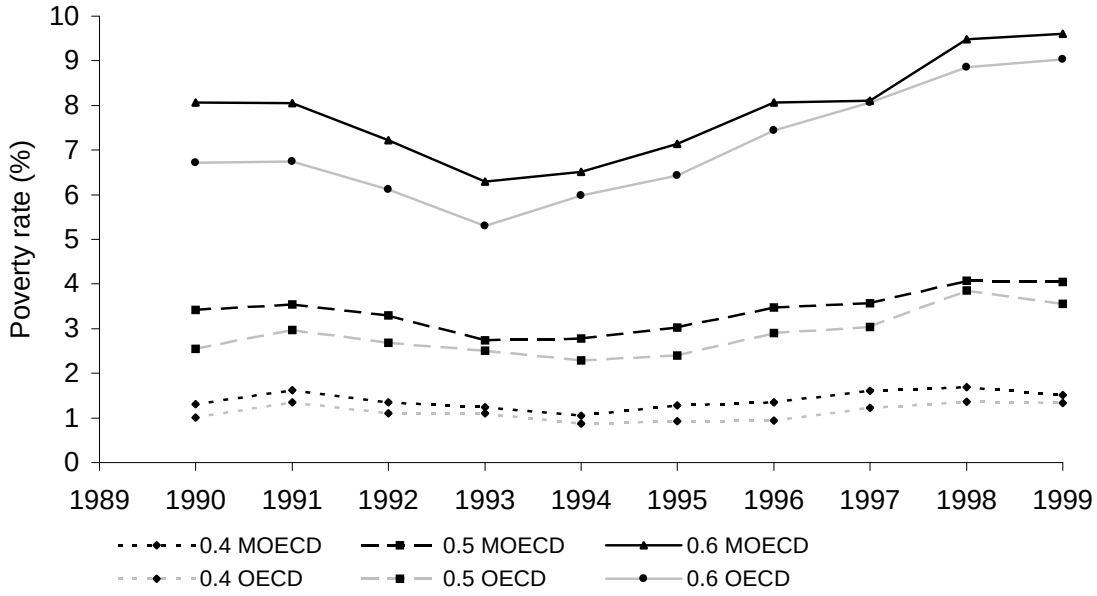


Figure 4: Poverty rates by OECD- and MOECD-scales modified disposable incomes as a proportion of median income (see Economic Council, 2001)

line being 60 per cent of median. Thus the rise in head count index (H) indicates that there were more people by the end of the decade than there had been in the beginning. The poverty gap measure (HI) in turn indicates that the aggregate income shortfall of the poor increased 35.2 per cent (poverty line being 50 per cent of median). What is striking about Table 1 is that whether the poverty line is set at 40, 50 or 60 per cent of national median income, not only the number below the line have risen dramatically since the beginning of the 1990s but poverty has also become more severe. In addition, the aggregate poverty gap grew by proportionately slightly less than the head count index (35.2 per cent versus 51.6 per cent poverty line being $\frac{1}{2}$ of median). Finally, the 21.7 per cent (31.7) rise in P_2 (poverty line being 50 per cent (60 per cent) of median) suggests that incomes among the poor were also distributed more unequally.

Are our quantitative results on the change in poverty over this period robust to the choice of an indicator of the standard of living? An alternative yardstick is to use consumption expenditure as the measure of standard of living. Spending

Table 1

Aggregate Poverty Measures (per cent of median), Finland, 1990, 1993 and 1998[1]

Income poverty

Poverty index	1990			1993			1998		
	Poverty line			Poverty line			Poverty line		
	40%	50%	60%	40%	50%	60%	40%	50%	60%
H	1.01	2.54	6.72	1.10	2.50	5.29	1.36	3.85	8.85
HI	0.27	0.54	1.17	0.33	0.60	1.13	0.33	0.73	1.60
P2	0.14	0.23	0.41	0.16	0.26	0.44	0.15	0.28	0.54

Consumption poverty

Poverty index	1990			1993			1998		
	Poverty line			Poverty line			Poverty line		
	40%	50%	60%	40%	50%	60%	40%	50%	60%
H	1.37	4.59	10.02	1.09	3.81	8.96	1.60	4.84	11.82
HI	0.23	0.74	1.80	0.16	0.60	1.54	0.29	0.81	2.09
P2	0.06	0.20	0.52	0.05	0.16	0.42	0.08	0.24	0.60

[1] For purposes of comparison between income and consumption we use 1998 as the latest year.

as a measure of standard of living may better capture the longer-term aspects of households' well-being. From Table 1 we see that the number of households with spending below half the median expenditure in 1990, 1994-1996 and 1998 was more than the number whose disposable incomes were below 40 per cent and 60 per cent of the median. In other words over the whole of the 1990s, there were actually more people living below the consumption-based poverty lines than below income-based ones. The 43 per cent rise in consumption based P_2 measure during the latter part of the 1990s tells that consumption expenditures among the poor were also distributed more unequally in the end of the 1990s than in the beginning of the decade. Both the income and consumption expenditure measures showed a similar rate of growth over the 1990s.

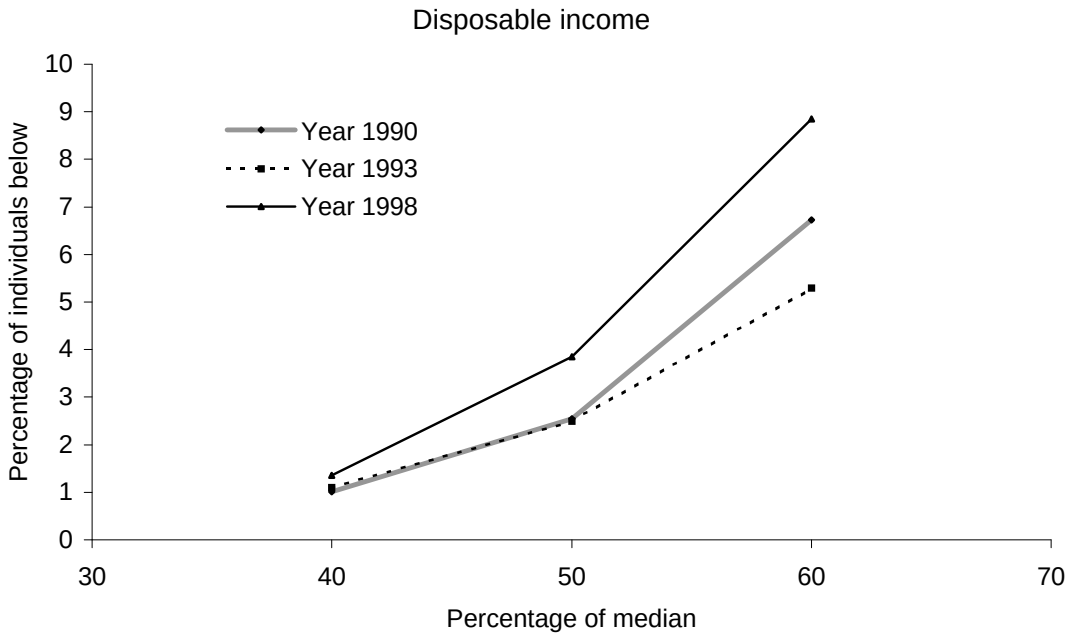
Are the quantitative results robust to the choice of poverty line and measure? The application of the dominance test is illustrated in Figure 5 where the range of possible poverty lines is taken from 40 to 60 per cent of the median. The curve for 1998 is everywhere above that for 1990. Thus we can agree on the direction of the

change - economic (income and consumption expenditure) poverty has increased – even if we do not agree where in that range the poverty line is located. In other words the first-order dominance conditions holds, and so one can conclude that all well-behaved poverty measures and all possible poverty lines will show an unambiguous increase in aggregate poverty between two dates.

It may also be of interest to explore the socio-economic status composition of those in the poorest group. For this purpose we can use the decomposable property of P_a. In other words we can decompose aggregate poverty into its constituent parts. First, we consider the population split into 8 socio-economic subgroups in Table 2. Using the Head count measure, H, we look at those with below 40, 50 and 60 per cent of median income in years 1990 and 1998. The changes between these dates are the most interesting in terms of composition. In 1990 the three most 'over-represented' subgroups were pensioners, entrepreneurs and others. Over the period since 1990, the biggest change was the major deterioration in the position of unemployed households. In 1990 6, 4 and 4 per cent (with different poverty lines) of unemployed households are found below those poverty lines. In 1998 the corresponding figures are 31, 31 and 26 per cent.

The incidence of poverty is also on a rather different set of people under the expenditure measure. Using expenditure as the living standard measure leads to many more pensioners and fewer households of working age being classified as poor. This is because pensioners' spending tends to be low compared with the average. On the other hand there are a considerable number of low-income non-pensioner households whose spending is relatively high.

The breakdown by socio-economic group is only one of numerous possible way of decomposing the population to reveal its constituent parts and their contribution to the overall picture of poverty. If we divide the population into 10-year age-groups, divided according to the age of the head of the households, we can see very little variations in the level of contribution to aggregate poverty (see Table 3). Only among those households with the head in the age group 45-54 over the 1990s an increase in the contribution to aggregate poverty is remarkable. The high rate of unemployment among this age group is the main reason for this trend. Similar analysis dividing the population according to family types will be presented in Table 4. Perhaps



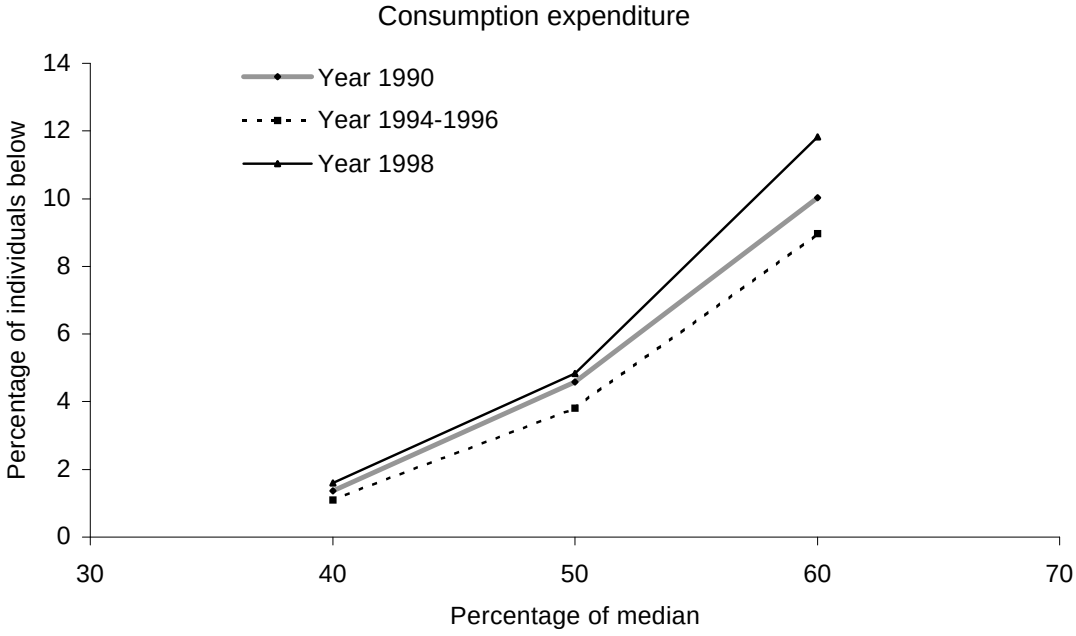


Figure 5: First-Order Dominance (FOD) from median

Table 2

Subgroup poverty contributions in 1990 and 1998; Head count measure (H,%) Income poverty

Population group[1]	1990			1993			1998		
	Poverty line			Poverty line			Poverty line		
	40%	50%	60%	40%	50%	60%	40%	50%	60%
Farmers	13.35	11.07	8.76	6.38	5.31	7.63	4.32	7.27	6.60
Entrepreneurs	24.42	15.82	11.71	30.08	24.32	16.55	23.59	13.45	10.17
White collars	0.58	1.51	2.22	0.00	0.00	0.42	0.00	0.91	1.71
Blue collars	3.03	4.15	6.63	1.22	4.87	4.87	1.36	3.61	8.74
Workers	5.85	14.72	19.82	0.91	3.42	9.32	2.39	9.75	14.27
Pensioners	14.31	21.71	30.89	0.00	2.38	8.46	2.88	8.77	12.58
Unemployed	6.05	4.09	3.86	19.49	29.03	27.23	31.19	30.70	25.96
Others	32.42	26.93	16.11	41.92	30.68	25.51	34.27	25.54	19.97
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Consumption poverty

Population group[1]	1990			1993			1998		
	Poverty line			Poverty line			Poverty line		
	40%	50%	60%	40%	50%	60%	40%	50%	60%
Farmers	7.04	6.00	9.12	15.24	8.70	7.55	1.97	3.29	2.82
Entrepreneurs	0.67	1.95	3.37	2.79	2.06	2.97	7.78	3.77	3.12
White collars	0.18	0.53	2.34	0.00	1.30	3.41	4.79	2.22	3.87
Blue collars	3.90	5.75	8.33	6.78	3.56	7.47	2.85	3.88	5.13
Workers	17.89	25.01	25.04	8.56	16.71	16.92	11.47	26.59	30.99
Pensioners	61.23	53.16	44.69	43.37	40.25	36.75	39.17	31.97	31.26
Unemployed	3.85	1.77	1.25	17.93	23.09	19.17	10.93	15.02	12.92
Others	5.24	5.84	5.85	5.34	4.32	5.76	21.05	13.27	9.88
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1] We call Employers and own account workers in agriculture as Farmers, Other entrepreneurs and own-account workers as Entrepreneurs, Upper-level salaried employees as White collars and Lower-level salaried employees as Blue collars. It was not possible to separate students to own group in the HBS.

surprisingly we see relatively little variation in the level of contribution to aggregate poverty of different family types over the 1990s. Table 5 (students as a separate group) does appear to indicate that students is the group most at risk of poverty

Table 3

Poverty profile by the age of the household head

Population group	Year	Population share by household type (%)	OECD-scale, 50% of median[1] (1)	(2)	(3)	(4)	Modified scale, 60% of median[1] (1)	(2)	(3)	(4)
Under 25 years	1990	5.3	11.6	24.2	2.8	1.1	21.8	14.3	6.3	2.7
	1993	4.7	15.3	28.6	4.7	2.2	30.2	22.6	9.2	4.4
	1996	4.8	21.6	35.8	4.9	1.8	44.9	26.8	11.8	4.7
	1999	5.1	17.7	25.5	4.4	2.0	40.1	21.4	9.9	4.2
25-34- years	1990	22.6	2.2	19.4	0.4	0.1	4.8	13.3	0.9	0.3
	1993	21.0	3.1	26.3	0.6	0.2	6.3	20.9	1.3	0.4
	1996	19.7	2.9	19.6	0.5	0.2	7.2	17.7	1.3	0.4
	1999	17.6	3.5	17.3	0.6	0.2	9.7	17.9	1.4	0.5
35-44- years	1990	31.9	1.8	22.3	0.4	0.2	3.4	13.6	0.8	0.3
	1993	29.5	1.9	22.5	0.4	0.2	4.9	23.0	0.8	0.3
	1996	27.8	2.6	25.1	0.4	0.1	5.8	20.0	1.0	0.3
	1999	27.6	3.4	26.5	0.5	0.2	7.1	20.3	1.3	0.4
45-54- years	1990	16.9	1.4	9.6	0.3	0.1	4.1	8.6	0.8	0.3
	1993	20.7	1.9	15.9	0.5	0.2	3.6	11.9	1.0	0.4
	1996	22.6	1.3	10.2	0.3	0.1	5.1	14.4	0.8	0.3
	1999	23.8	2.6	17.3	0.5	0.2	6.7	16.7	1.3	0.5
55-64- years	1990	10.8	2.8	11.8	0.6	0.2	10.7	14.3	1.9	0.6
	1993	10.8	1.4	6.0	0.3	0.2	4.7	8.1	0.8	0.3
	1996	11.3	1.0	3.9	0.2	0.1	5.6	7.9	0.9	0.2
	1999	11.5	2.9	9.3	0.6	0.2	7.7	9.3	1.5	0.5
65-74- years	1990	7.5	2.4	6.9	0.5	0.3	18.0	16.7	2.5	0.7
	1993	8.1	0.2	0.6	0.0	0.0	4.4	5.6	0.3	0.0
	1996	8.2	1.0	2.8	0.2	0.0	5.3	5.4	0.6	0.2
	1999	8.3	0.7	1.7	0.2	0.1	7.6	6.6	0.9	0.2
Over 74 years	1990	4.9	2.9	5.7	0.5	0.2	31.1	19.1	4.7	1.1
	1993	5.3	0.0	0.0	0.0	0.0	9.3	7.9	0.8	0.1
	1996	5.5	1.4	2.6	0.1	0.1	11.4	7.8	1.4	0.3
	1999	6.0	1.5	2.5	0.4	0.1	12.5	7.8	1.8	0.5

[1] (1) H, (2) Contribution to aggregate poverty (%), (3) HI, (4) $P2$

during the 1990s. This may be misleading because the IDS and HBS data sets don't provide information on the extent of income and other support students received form their parents.

The advantage of using a range of lines is that the poverty measure obtained from single line may be sensitive to precise positioning of that line. Figure A1 illustrates this point. Figures show the distribution of disposable income for each of

Table 4

Poverty profile by the stage of life cycle of the household

Population group	Year	Population share by household type (%)	OECD-scale, 50% of median[1] (1)	(2)	(3)	(4)	Modified scale, 60% of median[1] (1)	(2)	(3)	(4)
One-person households	1990	9.6	7.3	27.6	1.8	0.8	21.7	25.9	5.4	2.2
(under 65 years)	1993	10.6	8.3	35.4	2.4	1.2	19.5	33.0	5.5	2.5
	1996	11.6	9.7	39.0	2.1	0.8	26.7	38.4	6.5	2.5
	1999	11.7	7.7	25.4	2.0	0.8	24.8	30.3	5.8	2.3
Single-parent	1990	7.2	4.4	12.6	0.6	0.2	8.8	7.9	1.6	0.5
households	1993	7.8	5.0	15.7	1.0	0.3	10.2	12.7	1.9	0.6
(under 65 years)	1996	8.2	2.4	6.7	0.3	0.1	7.7	7.8	1.0	0.2
	1999	7.9	6.5	14.5	1.3	0.4	14.9	12.4	2.8	0.8
Childless couples	1990	15.2	1.7	10.2	0.5	0.2	4.7	9.0	1.0	0.4
(under 65 years)	1993	16.1	2.0	13.1	0.5	0.2	4.5	11.5	1.0	0.4
	1996	16.6	1.7	9.8	0.4	0.2	6.2	12.7	1.1	0.4
	1999	18.6	2.7	14.2	0.6	0.3	7.3	14.2	1.4	0.5
Couples with children	1990	52.4	1.7	35.4	0.4	0.1	3.2	20.6	0.6	0.2
	1993	50.4	1.7	34.3	0.4	0.1	3.5	27.8	0.6	0.2
	1996	48.5	2.4	40.3	0.4	0.1	4.9	29.5	0.8	0.2
	1999	45.7	3.1	39.7	0.5	0.2	6.0	28.3	0.9	0.3
One-person,	1990	11.2	2.3	9.9	0.4	0.2	23.9	33.3	3.4	0.9
single-parent and	1993	11.5	0.0	0.0	0.0	0.0	6.8	12.4	0.5	0.1
childless couples	1996	12.0	0.7	2.9	0.1	0.1	7.0	10.5	0.8	0.2
over 64 years	1999	12.8	0.9	3.2	0.3	0.1	9.5	12.7	1.3	0.3
Others	1990	4.2	2.6	4.3	0.4	0.1	6.2	3.3	1.0	0.3
	1993	3.5	1.1	1.5	0.1	0.0	4.6	2.6	0.5	0.1
	1996	3.1	1.3	1.4	0.3	0.1	3.0	1.1	0.5	0.2
	1999	3.3	3.2	2.9	0.4	0.1	6.3	2.1	1.1	0.3

[1] (1) H, (2) Contribution to aggregate poverty (%), (3) HI, (4) $P2$

our eight socio-economic groups together with a vertical line indicating half mean income. For some groups, such as farmers, entrepreneurs and white collars, the precise location of the poverty line will have relatively little effect on the numbers within the group appearing in poverty. The reason is simply that the incomes of these groups are relatively evenly spread and no particular poverty line has any significance for them. As we can see from Figure A1 this is not the case for group such as unemployed whose incomes are highly concentrated around level, which is about half mean income. Thus a slightly lower poverty line would take unemployed households out of measured poverty, whereas a slightly higher line would bring many in.

Table 5

Poverty profile by the socioeconomic status of the household head

Population group	Year	Population share by household type (%)	OECD-scale, 50% of median[1] (1)	(2)	(3)	(4)	Modified scale, 60% of median[1] (1)	(2)	(3)	(4)
Employers and own-account workers in agriculture	1990	5.7	4.9	11.1	1.3	0.6	8.2	5.8	2.1	0.9
	1993	4.8	2.8	5.3	0.5	0.2	6.8	5.2	1.1	0.4
	1996	4.5	4.1	6.4	0.8	0.3	7.8	4.4	1.5	0.5
	1999	3.4	5.3	5.0	1.4	0.5	7.8	2.7	2.2	0.9
Other entrepreneurs and own-account workers	1990	7.4	5.4	15.8	1.7	0.8	8.7	8.1	2.5	1.2
	1993	6.6	9.2	24.3	2.9	1.5	12.1	12.7	4.1	2.1
	1996	6.3	7.0	15.2	2.0	1.0	10.2	8.5	3.1	1.5
	1999	7.1	6.9	13.8	2.1	1.1	10.5	7.8	3.2	1.6
Upper-level salaried employees	1990	16.2	0.2	1.5	0.1	0.0	0.7	1.5	0.1	0.1
	1993	15.0	0.0	0.0	0.0	0.0	0.2	0.4	0.0	0.0
	1996	15.8	0.5	2.7	0.1	0.0	1.3	2.5	0.2	0.0
	1999	17.8	0.1	0.3	0.0	0.0	0.6	1.1	0.1	0.0
Lower-level salaried employees	1990	19.4	0.5	4.1	0.1	0.0	2.1	5.1	0.3	0.1
	1993	19.9	0.6	4.9	0.1	0.0	1.4	4.5	0.2	0.1
	1996	19.1	0.9	6.1	0.1	0.0	2.9	6.8	0.4	0.1
	1999	19.1	0.8	4.5	0.1	0.0	2.2	4.4	0.3	0.1
Workers	1990	30.1	1.2	14.7	0.2	0.1	3.0	11.3	0.5	0.1
	1993	22.3	0.4	3.4	0.0	0.0	1.7	6.0	0.2	0.1
	1996	23.1	0.5	4.2	0.1	0.0	2.3	6.7	0.3	0.1
	1999	23.5	0.9	5.7	0.1	0.0	4.3	10.4	0.4	0.1
Students	1990	1.2	39.7	19.3	9.2	3.6	63.3	9.7	20.9	9.3
	1993	1.9	29.5	22.6	8.8	4.1	53.1	16.2	16.6	8.0
	1996	2.4	30.5	24.7	7.6	3.1	61.6	18.0	18.2	7.8
	1999	2.4	38.0	25.3	9.6	4.1	71.5	17.6	18.9	8.4
Pensioners	1990	18.4	3.0	21.7	0.5	0.2	22.5	51.2	3.3	0.9
	1993	19.8	0.3	2.4	0.0	0.0	6.2	19.5	0.5	0.1
	1996	20.9	1.1	7.9	0.1	0.1	7.9	20.4	0.9	0.2
	1999	20.3	1.6	9.0	0.3	0.1	10.5	22.3	1.4	0.4
Unemployed	1990	0.6	16.6	4.1	4.4	1.7	43.3	3.4	10.6	4.0
	1993	8.0	9.1	29.0	1.5	0.5	21.8	27.8	4.1	1.3
	1996	6.8	10.8	25.5	1.1	0.2	34.1	28.9	5.3	1.3
	1999	5.1	19.3	27.7	2.9	0.9	53.6	28.5	9.3	2.7
Others	1990	0.9	22.5	7.7	4.7	2.1	37.7	4.0	9.2	4.1
	1993	1.8	11.4	8.1	3.9	1.8	26.8	7.6	7.0	3.2
	1996	1.2	17.5	7.3	3.6	1.1	28.5	4.2	7.6	2.8
	1999	1.3	23.4	8.7	3.4	1.0	37.7	5.2	7.8	2.5

[1] (1) H, (2) Contribution to aggregate poverty (%), (3) HI, (4) $P2$

4 Conclusions

We have examined recent trends in the poverty in Finland using two data sources, the IDS and the HBS. We have drawn on the recent literature on poverty analysis to analyse a range of poverty measures, using dominance conditions to rank the distributions of living standards. As regards trends in poverty over time, the long-run perspective available from the HBS indicates that from the early 1970s to the beginning of 1990s, the relative poverty rate has declined. The latter part of the 1990s was clearly different. We find that poverty rose and became more severe over the period 1995-1999 for a very broad class of poverty measures and a wide range of poverty lines. Whilst the total numbers in poverty during the 1990s on these various definitions have risen markedly, the composition of the poor has also changed significantly. There is little doubt that unemployed households are the most vulnerable group of the population.

It is obvious that this is not the whole story about poverty. Our study has been based on a series of snapshots of the income and consumption distributions. It makes possible to address questions such as how many people are poor and what sort of individuals are poor at a given point in time. It does not tell how long are people poor. An important area of future research is to look at the dynamic properties of the income and consumption distributions.

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Appendices

Figure A1: Distribution of disposable income by socio-economic groups in 1990, 1993, 1996 and 1999

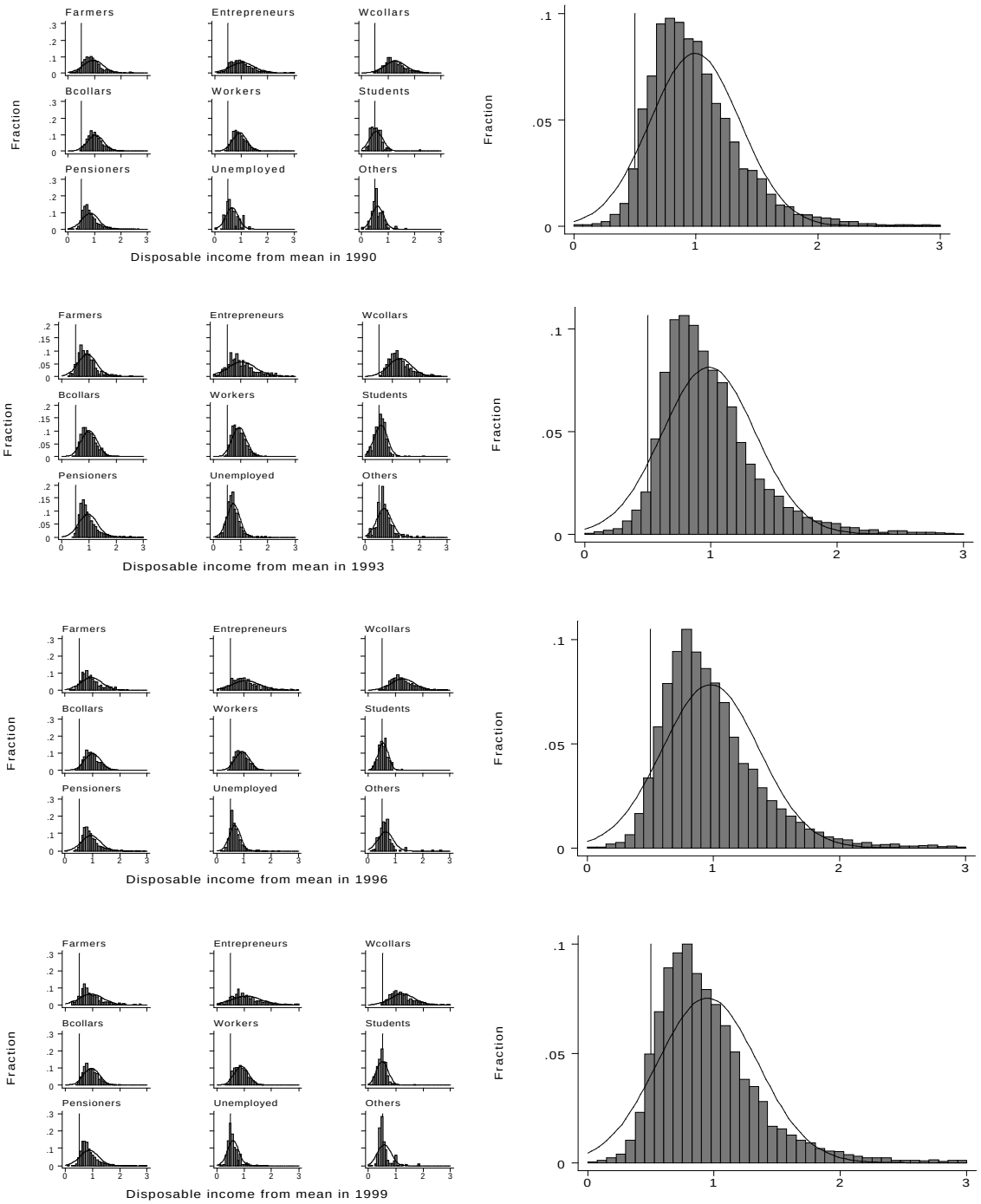

Table A1 Poverty rates of H, HI, P2 from mean and median by using OECD-scale in 1971-1999

Poverty rate %	Poverty measure	1971	1976	1981	1985	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
From median															
40	H	3.67	1.80	2.38	1.59	1.01	1.35	1.10	1.10	0.88	0.93	0.94	1.22	1.36	1.33
40	HI	1.07	0.43	0.76	0.51	0.27	0.36	0.29	0.33	0.23	0.21	0.23	0.29	0.33	0.33
40	P2	0.50	0.24	0.49	0.37	0.14	0.17	0.14	0.16	0.12	0.09	0.10	0.13	0.15	0.15
50	H	8.25	4.36	4.93	3.47	2.54	2.97	2.69	2.50	2.29	2.40	2.90	3.04	3.85	3.56
50	HI	2.07	0.93	1.32	0.87	0.54	0.69	0.57	0.60	0.47	0.47	0.54	0.63	0.73	0.71
50	P2	0.87	0.40	0.68	0.48	0.23	0.29	0.24	0.26	0.20	0.18	0.20	0.25	0.28	0.28
60	H	13.67	10.64	9.82	8.32	6.72	6.74	6.11	5.29	5.99	6.43	7.44	8.06	8.85	9.03
60	HI	3.52	1.99	2.30	1.65	1.17	1.35	1.17	1.13	1.03	1.06	1.26	1.40	1.60	1.58
60	P2	1.46	0.71	1.02	0.71	0.41	0.51	0.43	0.44	0.36	0.35	0.40	0.47	0.54	0.53
From mean															
40	H	6.24	2.28	2.74	1.86	1.27	1.66	1.32	1.51	1.22	1.31	1.45	1.85	2.16	2.24
40	HI	1.48	0.52	0.84	0.57	0.34	0.44	0.36	0.41	0.29	0.29	0.32	0.41	0.47	0.50
40	P2	0.66	0.27	0.51	0.39	0.16	0.20	0.17	0.19	0.14	0.12	0.13	0.18	0.20	0.21
50	H	11.41	5.74	5.87	4.35	3.67	4.02	3.58	3.62	3.36	3.82	4.51	5.44	6.19	7.00
50	HI	2.92	1.15	1.50	1.02	0.72	0.87	0.75	0.80	0.66	0.70	0.82	0.97	1.18	1.26
50	P2	1.21	0.46	0.74	0.53	0.28	0.36	0.30	0.33	0.25	0.25	0.28	0.35	0.41	0.44
60	H	19.89	13.03	11.84	10.39	10.27	9.71	8.81	9.03	9.05	10.26	11.85	13.15	15.16	15.82
60	HI	4.98	2.51	2.67	2.03	1.68	1.79	1.60	1.62	1.54	1.72	2.01	2.33	2.70	2.89
60	P2	2.04	0.86	1.14	0.82	0.55	0.64	0.55	0.59	0.50	0.53	0.61	0.73	0.86	0.92

Table A2 Poverty rates of H, HI, P2 from mean and median by using MOECD-scale in 1990-1999

Poverty rate %	Poverty measure	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
From median											
40	H	1.31	1.62	1.34	1.24	1.05	1.28	1.35	1.60	1.69	1.51
40	HI	0.34	0.43	0.36	0.37	0.28	0.28	0.31	0.35	0.41	0.40
40	P2	0.16	0.20	0.17	0.18	0.14	0.11	0.13	0.15	0.18	0.19
50	H	3.42	3.55	3.29	2.74	2.77	3.02	3.48	3.56	4.07	4.05
50	HI	0.72	0.85	0.72	0.69	0.59	0.62	0.70	0.77	0.86	0.83
50	P2	0.29	0.36	0.30	0.30	0.24	0.23	0.26	0.29	0.34	0.33
60	H	8.06	8.05	7.23	6.29	6.51	7.14	8.06	8.11	9.48	9.60
60	HI	1.53	1.62	1.44	1.28	1.22	1.31	1.50	1.56	1.79	1.78
60	P2	0.53	0.62	0.53	0.50	0.43	0.45	0.51	0.55	0.63	0.62
From mean											
40	H	1.67	2.08	1.68	1.74	1.53	1.68	1.90	2.19	2.50	2.48
40	HI	0.40	0.51	0.42	0.46	0.35	0.37	0.42	0.49	0.57	0.58
40	P2	0.18	0.23	0.19	0.21	0.16	0.15	0.17	0.20	0.24	0.25
50	H	4.49	4.52	4.12	3.83	3.84	4.38	4.91	5.46	6.49	7.03
50	HI	0.90	1.02	0.89	0.89	0.78	0.86	0.97	1.11	1.29	1.36
50	P2	0.34	0.41	0.35	0.38	0.30	0.31	0.34	0.41	0.47	0.49
60	H	10.79	10.01	9.52	9.16	9.71	11.00	11.87	13.41	15.29	16.29
60	HI	1.96	2.01	1.84	1.77	1.72	1.92	2.14	2.42	2.82	3.03
60	P2	0.66	0.74	0.65	0.66	0.58	0.63	0.70	0.81	0.94	0.99